Using pregnancy scanning and individual animal data in pastoral zone - cattle

Focus Farm case study

Allandale Station is using pregnancy scanning and weight data to guide decision-making on animal retention for breeding and matching stock classes to available feed resources.

Enterprise Snapshot

Owners: Andrew and Donnagh Clarke
Property name: Allandale Station
Location: South east of Oodnadatta
Size: 497,000 hectares
Brief enterprise description: 7,500 head of predominately Angus and Sangus cattle
Number of employees: 3.5 family members plus 1 casual staff on a seasonal basis
Average annual rainfall: 175 mm
Technology in use: Pregnancy scanning, eID panel and stick readers in conjunction with weigh scales, and remote water monitoring devices.

Background

Allandale Station is situated in the far north of South Australia between Oodnadatta and Lake Eyre. The property contains a high proportion of floodplain country associated with the Neales River and consequently, has the capacity to grow high amounts of feed. It also contains many natural waters following rainfall events that support good grazing.

Andrew and Donnagh Clarke run up to 7,500 of mostly Angus and Sangus cattle, but this number can be heavily reduced during a succession of dry years. Currently, the enterprise is in a rebuilding phase and runs just under 4,500 head.

mla MEAT & LIVESTOCK AUSTRALIA
awi | sheep connect south australia
SA SHEEP INDUSTRY FUND
SA CATTLE INDUSTRY FUND
Government of South Australia
Department of Primary Industries and Regions

The Clarkes select bulls and breeding cows to maximise calving and feed conversion to achieve the greatest possible gains when grazing conditions are favourable. This case study focuses on the use of pregnancy scanning and individual animal data to inform breeding and grazing management.

What improvements were sought at Allandale?

- Accurate selection of breeder cows that reliably get into calf, produce calves that survive to weaning and that do not over produce milk leading to excessive loss of body condition.
- Certainty of the pregnancy status of cows being sold.
- Genetic improvements to increase efficiency and reliable maintenance of weight gain from available feed.
- Effective allocation of available feed resources to different classes of stock.
- Quick detection and repair of major leaks in the water system to save time and operating costs.

What have they adopted?

- Boviscan Curve Ultrasound equipment
- Gallagher heavy duty load bars
- Gallagher TWR-5 weigh scale with panel reader
- Gallagher stick reader
- Farmbot tank sensors

Pregnancy scanning

In early 2022 the Clarkes purchased pregnancy scanning equipment and invested in training multiple staff to use it with the aim of making better decisions around mating and selling. They use the scanner after joining to identify which cows are in calf and to separate dry individuals for re-mating. Cows that scan as ‘not in calf’ more than twice are investigated for causes to inform future management. They are then held together and managed for the purpose of being removed from the breeding program. Scanning data enables accurate selection and retention of productive breeders, removes unproductive animals to conserve available feed, and contributes to the genetic improvement of the herd. Strong maternal instinct is also a factor in selecting next generation females.

Pregnancy status is an important factor used in matching available feed to individual animal requirements. The Clarke’s use this information to allocate different classes of stock to paddocks. Cows in calf are mobbed together and allocated to paddocks with appropriate feed resources to keep them in the good body condition going into calving and through to weaning. The aim is to have calves born within the optimal weight range for ease of birth and good survival, and mothers that can produce sufficient milk to enable good weight gain for calves without losing an excessive amount of body condition. This puts their breeding cows in a better position for subsequent joining and raising of the next calf.

Scanning data at each muster is used to track the progress of cows in calf to identify losses and inform forward planning for sales. Scanning is also used when selling off cows in extended dry times (for reasons not related to their performance) to be certain of their pregnancy status for marketing purposes. This helps maximise returns for stock being sold.

The Clarkes are planning towards using artificial insemination in the future to reduce the cost of purchasing their commercial sires. Over the past five years improved genetics have been a large focus. Currently, there are multiple sires used on the property that also have semen retained by the breeder and in other stud programs. Having their own scanning equipment on site will be important for obtaining faster results about the success of each round. A purpose-built facility to implement this plan is being factored into future property planning.

Using individual animal data

All cattle are weighed and recorded using eID tags and the panel reader at every muster, typically 2-3 times per year, and weight data is collected. A stick reader is kept as a back-up and used to scan animals in remote yards when required. In addition to individual animal weights, data is captured to describe breed. This is helping the Clarkes reduce the remaining Hereford component of the herd to complete the shift to Angus-Sangus crossbreds which perform more reliably in the paddock and in carcase feedback.

Individual animal data is currently used to:

- keep accurate count of numbers of stock in particular paddocks and across the property
- monitor animals for consistency of weight gain and separate those that show excessive fluctuation to be managed separately and sold off
- identify when weight loss occurs in a mob so that possible causes, including changes in pasture/browse composition, can be investigated and mitigated where possible
- measure the weight gain performance of individual animals starting from weaning to enable selection of breeders with superior performance
- use data to group animals by weight class and weight gain (or loss) and manage them as separate units to maximise feed conversion and production
- identify when animals, particularly bulls, have moved from the paddock they were assigned at previous muster into a paddock with a different mob.

In addition to data they collect from their own animals the Clarkes also use a data-based approach for objectively assessing and selecting genetics that they wish to acquire. With an outlook to improve herd performance the Clarkes use of EBVs (Estimated Breeding Values) to guide their stud sire selections.

Consideration is currently being given to doing genetic profiling on selected cows from their own herd that may be used in an AI breeding program. The aim is to produce their own in-house high performing bulls that are fully acclimatised to the local conditions from birth, and which can provide a lower cost alternative to purchasing bulls from external sources.

Remote water monitoring

There are currently 12 Farmbot tank water level sensors in use across the property. These work via satellite to get the most reliable signal coverage and provide quick notification in the event of a major leak. Although the system has significant costs for the use of satellite telemetry, the greatly reduced need for physical checking of water assets, rapid detection of faults and faster response to restore water access to stock makes them a very worthwhile investment.

Results

Pregnancy scanning has enabled much more confidence in decision making for culling and sales.

Routine animal scanning and the collection of weight data has enabled weight loss events in particular mobs to be identified more quickly, enabling investigation for causes and mitigation to be more effectively implemented.

Installation of Farmbot water monitoring has provided peace of mind that problems with the water system will be quickly detected and has enabled faster repairs.

It will require a few more years of collecting data to inform decision making before the full benefits of routine pregnancy scanning and individual animal data will be realised. However, an immediate increase in confidence over management decisions has been beneficial for increasing productivity and improving herd genetics.

Further information

Focus Farms are an initiative of the Government of South Australia's Red Meat and Wool Growth Program, supported by Meat & Livestock Australia, SA Sheep and Cattle Industry Funds and SheepConnect SA.

For more information visit pir.sa.gov.au/redmeatandwool.